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ABSTRACT

For this study, the physical performance levels of 73 children in grades 4-6 were assessed, and each individual was administered an adaptation of Kenyon's Attitude Toward Physical Activity (ATPA) survey. This instrument measured selected attitudes related to physical activities: social, health and fitness, risk, aesthetic, catharsis, ascetic, victory, and fun. Also analyzed were the time spent actively involved in various activities, media influence on activity areas, and the ability to associate a sports personality with a specific activity. The results indicated no significant difference for physical performance level as a factor in participation in the eight areas tested. Significant differences were found for sex in the areas of social, aesthetic, victory, and fitness. Females scored higher than males in valuing activities for social and aesthetic aspects. Analysis on the basis of race also produced significant differences, in that blacks scored higher in social reasons for participating, while whites scored higher in participating for the risk aspect. No significant differences were found for either race or sex in the areas of health, fun, or catharsis. The adapted ATPA survey is attached. (FG)

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PHYSICAL PERFORMANCE, SEX, AND RACE AS FACTORS IN THE ATTITUDE OF INTERMEDIATE SCHOOL CHILDREN TOWARD PHYSICAL ACTIVITY

by

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ABSTRACT

Skill, Sex, Race and Attitude Toward Participation in Physical Activity.

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The purpose of this study was to determine how physical performance, sex and race affected the attitude of intermediate school children toward physical activity. 73 S's of approximately equal sex and race (Black and White) were administered an adaptation of Kenyon's A.T.P.A. Scale. The present scale, included two additional reasons for participation in physical activity, for competition and for fun, as well as, a name recognition inventory. Results from the AAHPER Youth Fitness Test and the previous years physical education grade served as criteria for classifying the subjects into 5 equal physical performance levels. Results of eight, 5 (physical performance level) X 2 (sex) by 2 (race) ANOVA's indicated no significant differrences between excellent, good, average, fair or poor performers in reasons for participation in physical activity. Social aspects of participation were more attractive to females than males and to Blacks than Whites. Training was seen as more of an inducement for participation for males than females. Beauty aspects were more attractive to females than to males. Competition was favored by males to a greater degree than to females. White subjects favored the thrill aspects of activities more than Black subjects. No significant differences

existed in the areas of participation in physical activity for health, fun or catharsis between male and female, Black or White subjects. The conclusions of the present study support our sexual stereotypes of females being more interested in the social and aesthetic aspects of sport participation, while their male counter parts are interested in the ascetic and competitive aspects. The interest shown by Blacks in the social aspects may be relative to their later participation in team rather than individual sports. White interest in the pursuit of vertigo may in part explain the predominance of Whites in activities such as automobile racing and skiing. The unexpected finding of no difference between groups of different skill levels is perplexing, manifestation of this finding may relate to such problems as the attraction of competition to both skilled and unskilled performers and its effect on learning and performance.

The primary purpose of this study was to determine to what degree physical performance influenced an individual's attitude toward physical activity. Secondary, considerations dealt with the role of sex and race on attitude toward physical activity. The study utilized intermediate school age boys and girls from an integrated suburban elementary school. The physical performance level of each student was compared with the results of an attitude inventory to determine the degree of relationship between physical performance level and attitude formation.

The review of literature supported the hypotheses that sex and race have a definite effect on performance in, and preference for physical activity. The literature has also indicated, however, that many other variables come into play in attitude formation, such as, success in an activity; enjoyment of the activity; opportunity to participate in the activity; encouragement in the form of peer, family or social approval of the activity; and the number, sex and ordinal positioning of brothers and sisters with whom to engage in the activity with. The research has also pointed out that how an individual feels about his own performance, will to a large part, determine his participation regardless of how good or bad his performance.

The studies reviewed seemed to point to the fact that how an individual feels about participation in physical activity can be measured and the factors involved in attitude formation identified. Some authors pointed to the stereotyping of the male-female role which society imposes and how they may affect the person's attraction to or rejection of certain types of physical

activity. Finally, it was pointed out in the literature, the importance the family, the peers, and the culture of the individual plays in preference for activity.

The subjects utilized for this study (N=73) were selected from the fourth, fifth and sixth grades of one school rather than from several to assure consistency in administration of and evaluation in all testing situations. Physical performance levels were assessed for each individual based on a combination of present status relative to motor fitness as measured by the A.A.H.P.E.R. Youth Fitness Test Battery (a recognized valid test) and past achievement in physical education as measured by an overall grade in physical education from the previous year relative to participation, cooperation, and various sport and skill level testing. Uniformity of administration and evaluation was possible as a result of there being only one instructor assigning the grades. The grades used were accepted as valid measures of performance because they were determined prior to formation of procedures used in the collection of data for this study. Each individual's score from both the A.A.H.P.E.R. Youth Fitness Battery and his grade in physical education from the previous year was ranked and a sum of the two ranked scores was assigned to the individual as the measure of physical performance. Five levels of physical performance were established with equal numbers of subjects assigned to each group. All subjects were administered a self report inventory adapted from Kenyon's A.T.P.A. (1968).

Kenyon's "Attitude Towards Physical Activity," (A.T.P.A.) survey was selected as the instrument with which to measure the subject's preference toward physical activity. In his survey, Kenyon identified six areas of physical activity. He has described the first as a social experience and he justified this by saying that activity engaged in by groups of two or more is perceived by many as having some social value and he defined it as activity whose primary purpose is to provide a medium of social intercourse i.e. to meet new people and to perpetuate existing relationships. Another area, physical activity for health and fitness was justified because a sizeable portion of contemporary Western culture, whether active or not, believe that physical activity has the capacity to enhance personal health. Physical activity for pursuit of vertigo was considered to be those physical experiences providing at some risk to the participant an element of thrill through the medium of speed, acceleration, sudden change in direction, or exposure to dangerous situations with the participant usually remaining in control. Physical activity as an aesthetic experience has as its basis the belief by many people that physical activity in some of its form is pleasing to the eye. Physical activity as a catharsis was perceived as those activities providing a release of tension, frustration and so called pent up emotions. Physical activity as an ascetic experience was described as activities engaged in by individuals who aspire to high levels of achievement and recognize the need to delay gratification and endure long and strenuous periods of training. These preceeding six areas are the basis of Kenyon's work on attitude formation.

For this study two additional areas were added. Physical activity for the pursuit of victory was added from Apgar's study (1977) and was characterized as the winning of the contest as being the most important reason for participating. A dimension of the author's own creation was added, physical activity for fun to cover the areas which could not be specifically characterized under the previous headings. Included were areas of play, such as, hop scotch, jump rope, games of tag, etc. which while having qualities looseiy related to one or more of the other seven areas of activity have as their main purpose enjoyment to the individual and having fun.

All subjects were administered the survey which was designed to analyze what inherent areas of physical activity the subject was interested in. This purpose was accomplished through several different methods. A Likert scale was used to measure the degree of favorability of responses the subject made to various sport and recreational activities associated with each of the eight established areas to determine preferences. A name recognition inventory was included to measure the subject's ability to associate a personality with a specific area of activity. The inventory also sought to assess the time spent by the subject actively involved in each area, while a similar section sought the subject's perception of how much time his peers spent involved in each area. This was done through a check list as to how often (weekly, monthly, less often or never) the subject engaged or perceived his peers to engage in each of the eight areas of activity. Another section sought to ascertain how much media influence is involved in the subject's contact with the activity areas by having the

subject place a numerical value on the approximate amount of time he spends reading or viewing in the areas of activity.

Means were computed as the measure of central tendency and the standard deviation computed as the measure of dispersion for the purpose of describing the data. Conclusions were drawn from eight 5 x 2 x 2 ANOVA's. Tukey's H.S.D. procedure was utilized post hoc to locate any significance indicated by the "F" ratio. The probability level was set at .05 for all comparisons.

The results of the analysis indicated no significant difference existed for physical performance level as a factor in participation in physical activity in any of the eight areas assessed. Significant differences were indicated for sex in the areas of social, training, beauty and competition.

Females scored significantly higher than males in the areas of participation in physical activity for social and beauty aspects. Males scored significantly higher in the areas of participation in physical activity for training and competition aspects.

Significant differences were also indicated for race in the areas of participation in physical activity for social and thrill aspects. Blacks scored significantly higher in the area of participation in physical activity for social aspects and whites scored significantly higher in the area of participation in physical activity for thrill aspects. No significant differences were found for either race or sex in the areas of participation in physical activity for health, fun, or release aspects.

Tukey's H.S.D. procedure located significant differences for sex within physical performance level in the areas of social, training, beauty, and competition as follows: 1) females scored significantly higher than males at the poor and average performance level of participation in physical activity for social aspects, 2) males scored significantly higher than females at the poor and good levels of performance in the area of participation in physical activity for training aspects, 3) females scored significantly higher than males at the poor, good and excellent levels of performance in the area of participation in physical activity for beauty aspects, and 4) males scored significantly higher than females at the good level of performance in the area of participation in physical activity for competition aspects.

Tukey's H.S.D. procedure also located significant difference for race within physical performance level in the areas of social and thrill as follows: 1) blacks scored significantly higher than whites at the average and excellent levels of performance in the area of participation in physical activity for social aspects, and 2) whites scored significantly higher than blacks at the average level of performance in the area of participation in physical activity for thrill aspects.

Significant differences of sex within race were also indicated. Black females scored significantly higher than black males and white females scored significantly higher than white males in the area of participation in physical activity for social aspects.

A significant difference of race within sex was also indicated.

Black males scored significantly higher than white males in the area of participation in physical activity for social aspects.

The conclusions of this investigation based on the analysis of collected data reject the possibility of performance level being a determinent factor in preference for participation in physical activity. This study, at least in part, supports the literature which refers to the stereotyping of the male-female role. The significantly higher scores of the males in the more strenuous and agressive areas of training and competition suggests the often referred to idea that males should be tough, while the significantly higher scores of the females in the areas of social and beauty brings to mind the accepted female image; gentle, graceful and dependent on others.

The significantly higher score for whites than blacks in the area of participation in physical activity for thrill may be a direct result of the difference in the socioeconomic background of the white and black subjects in this study. Whereas the black subjects have more opportunity to engage in dangerous or thrill oriented activities, such as, going through abandoned houses, playing in empty lots, climbing trees, or creating games involving risk, the white children do not have, or are restricted by their community from, participating in many of these outlets and so may desire to try thrill type activities to satisfy an inner need for the pursuit of vertigo. The significantly higher scores of blacks for social outlets possibly could be explained on the basis of socioeconomic differences, with the white subjects having more access to television, video games, books, and quite possibly a more unified family background, the need for social interaction may not be as great.

The attraction of competition is an area which becomes a problem for the physical educator. Competitive games seem attractive to both poorly and highly skilled alike, there is a situation created in which the physical educator must restrict competitive situations while not stifling enthusiasm. The fact that competitive situations present a very poor learning atmosphere for the poorly skilled is not perceived by these children who merely see the glamour of the game. The physical educator must foster learning experiences for all levels of ability and not show preferential treatment only to the more highly skilled by only providing competitive situations.

More investigation needs to be conducted in the area of attitude formation of elementary age school children towards physical activity. Due to the importance of these formative years toward attitude development, it is essential for educators to understand as well as possible, all of the factors which contribute to an individual's acceptance of physical activity. Only by more fully understanding attitude formation can our profession better develop programs which will attract, challenge, and fulfill the individual's need for a well rounded, physically active life both in childhood and later as an adult.

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ATTITUDE TOWARD PHYSICAL ACTIVITY SURVEY

NAME _____

1. A. List your two favorite athletes:

#1 Choice _____

#2 Choice _____

B. List your two favorite performers (television or movie):

#1 Choice _____

#2 Choice _____

C. List your two favorite cartoon characters:

#1 Choice _____

#2 Choice _____

2. Here is a list of nine reasons why people engage in physical activity. Please read each area so that you can answer the questions following. As you read each area ask yourself the question, "When playing a game or sport, what is most important to me."

a) PHYSICAL ACTIVITY AS A SOCIAL EXPERIENCE - To meet and be with people. -

b) PHYSICAL ACTIVITY FOR HEALTH AND FITNESS - To get into and stay in shape.

c) PHYSICAL ACTIVITY AS A THRILL BUT INVOLVING SOME RISK - For the excitement and danger.

d) PHYSICAL ACTIVITY FOR THE BEAUTY OF HUMAN MOVEMENT - Because it looks graceful or pretty.

e) PHYSICAL ACTIVITY FOR THE RELEASE OF TENSION - Doing or watching others do things as a way of relaxing.

f) PHYSICAL ACTIVITY AS PROLONGED OR STRENUOUS TRAINING - Because to be really good takes practice even when you have to force yourself.

g) PHYSICAL ACTIVITY AS A GAME OF CHANCE - Being a part of an activity where luck is more important than skill.

h) PHYSICAL ACTIVITY FOR COMPETITION - With winning as the reason for playing.

i) PHYSICAL ACTIVITY FOR FUN - Just being involved because you will enjoy it.

2A. How often do you actually take part in physical activities that are best described by one or more of the following categories? (when in season) Mark space in each row.

	at least once per week	once or twice per month	less often or never	
(a) PHYSICAL ACTIVITY AS A SOCIAL EXPERIENCE	—	—	—	7
(b) PHYSICAL ACTIVITY FOR HEALTH AND FITNESS	—	—	—	8
(c) PHYSICAL ACTIVITY AS A THRILL BUT INVOLVING SOME RISK	—	—	—	9
(d) PHYSICAL ACTIVITY AS THE BEAUTY IN HUMAN MOVEMENT	—	—	—	10
(e) PHYSICAL ACTIVITY FOR THE RELEASE OF TENSION	—	—	—	11
(f) PHYSICAL ACTIVITY AS PROLONGED AND STRENUOUS TRAINING	—	—	—	12
(g) PHYSICAL ACTIVITY AS GAMES OF CHANCE	—	—	—	13
(h) PHYSICAL ACTIVITY FOR COMPETITION	—	—	—	
(i) PHYSICAL ACTIVITY FOR FUN	—	—	—	

2B. Now, thinking of your best friends, on the average, how often do they actually take part (when in season)? Mark one space in each row.

	at least once per week	once or twice per month	less often or never	
(a) PHYSICAL ACTIVITY AS A SOCIAL EXPERIENCE	___	___	___	14
(b) PHYSICAL ACTIVITY FOR HEALTH AND FITNESS	___	___	___	15
(c) PHYSICAL ACTIVITY AS A THRILL BUT INVOLVING SOME RISK	___	___	___	16
(d) PHYSICAL ACTIVITY AS THE BEAUTY IN HUMAN MOVEMENT	___	___	___	17
(e) PHYSICAL ACTIVITY FOR THE RELEASE OF TENSION	___	___	___	18
(f) PHYSICAL ACTIVITY AS PROLONGED AND STRENUOUS TRAINING	___	___	___	19
(g) PHYSICAL ACTIVITY AS GAMES OF CHANCE	___	___	___	20
(h) PHYSICAL ACTIVITY FOR COMPETITION	___	___	___	
(i) PHYSICAL ACTIVITY FOR FUN	___	___	___	

3. How often do you watch each of the following types of physical activity on <u>television</u>?

	at least once per week	once or twice per month	less often or never	
(a) teen dance programmes	___	___	___	21
(b) exercise and physical fitness programmes	___	___	___	22
(c) special sports events showing dangerous and thrilling sports	___	___	___	23
(d) programmes showing the beauty of human movement (gymnastics, fancy diving, etc.)	___	___	___	24
(e) college or professional sports	___	___	___	25

	at least once per week	once or twice per month	less often or never	
4. How often do you <u>read</u> about sports and physical activity in the <u>newspaper</u>?	___	___	___	26
5. How often do you read about sports and physical activity in <u>magazines</u> or <u>books</u>?	___	___	___	27

	two or more	one	none	
6. To how many clubs or organizations (outside of school) sponsoring sports or physical activity <u>do you belong</u>?	___	___	___	28

7. Is there a television set in your home?	Yes ___	No ___	29

8. On the average, how many hours do you watch television each week? (For example, if you watch 2 hours each day, then you watch 2 x 7 or 14 hours each week).

   (a) In summer _____ (number of hours) 30-31

   (b) In winter _____ (number of hours) 32-33

9. On the average, how many hours do you watch sports on television each week?

   (a) In summer _____ (number of hours) 34-35

   (b) In winter _____ (number of hours) 36-37

10. In what sport or physical activity do you like to participate the most? (Consider all types of sports from swimming to field hockey to dancing). Write in the sport you like to play the most. _____ 38-40

11. In what sport or physical activity does your father (or guardian) like to participate the most? _____ 41-43

12. If you had the chance, name the sport in which you would like to participate most of all (even though you may never have played it before). _____ 44-46

13. What is your favorite sport to attend as a spectator? _____ 47-49

14. What is your father's (or guardian's) favorite sport to attend as a spectator? _____ 50-52

15. What is your favorite sport on television? _____ 53-55

16. What is your father's favorite sport on television? _____ 56-58

17. Here is a list of athletes, performers, and characters either from the movies or television. Next to each name check whether you like or dislike the person. If you do not know who the person is do not check anything for that person.

	LIKE	DISLIKE		LIKE	DISLIKE
John Travolta	___	___	Mikhail Baryshnikov	___	___
Pete Rose	___	___	Charlie's Angels	___	___
Olga Korbut	___	___	Ernie Banks	___	___
J. J.	___	___	Johnny Carson	___	___
James Bond	___	___	Stevie Cauthen	___	___
Jimmy The Greek	___	___	Fred Sandford	___	___
John Wayne	___	___	Minnesota Fats	___	___
Vasily Alexov	___	___	Peggy Fleming	___	___
Evil Knievel	___	___	Mork	___	___
Bobby Knight	___	___	Fred Astaire	___	___
Jim Fix	___	___	Nadia Comaneci	___	___
Arnold Schwarzenegger	___	___	Bleacher Bums	___	___
Bruce Lee	___	___	Lou Ferrigno	___	___
"Doctor J"	___	___	Clint Eastwood	___	___
Laverne	___	___	Incredible Hulk	___	___
Steve McQueen	___	___	Amarillo Slim	___	___
Road Runner	___	___	Bill Rodgers	___	___
Bruce Jenner	___	___	Dorthy Hamil	___	___
Gordie Howe	___	___	Janet Guthrie	___	___

	LIKE	DISLIKE		LIKE	DISLIKE
Robert Conrad	___	___	Pele	___	___
Howard Cosell	___	___	Ponzie	___	___
Dallas Cowgirls	___	___	Mr. Universe	___	___
Sugar Ray Leonard	___	___			

18. Here is a list of sports or activities which you might know about. After each activity mark the space which best corresponds to your answer.

	I PLAY IT	I WATCH IT	I READ ABOUT IT	I HAVE ATTENDED IT	I WISH I COULD DO IT
Baseball	___	___	___	___	___
Square Dancing	___	___	___	___	___
Jogging	___	___	___	___	___
Hang Gliding	___	___	___	___	___
Figure Skating	___	___	___	___	___
Professional Wrestling	___	___	___	___	___
Marathon Running	___	___	___	___	___
Horse Racing	___	___	___	___	___
Dodgeball	___	___	___	___	___
Social Dancing	___	___	___	___	___
Bicycling	___	___	___	___	___
Surfing	___	___	___	___	___
Gymnastics	___	___	___	___	___

	I PLAY IT	I WATCH IT	I READ ABOUT IT	I HAVE ATTENDED IT	I WISH I COULD DO IT
Tennis	___	___	___	___	___
Judo	___	___	___	___	___
Card Games	___	___	___	___	___
Football	___	___	___	___	___
Hill Dill	___	___	___	___	___
Disco Dancing	___	___	___	___	___
Hiking	___	___	___	___	___
Scuba Diving	___	___	___	___	___
Ballet	___	___	___	___	___
Darts	___	___	___	___	___
Karate	___	___	___	___	___
Bingo	___	___	___	___	___
Speed Skating	___	___	___	___	___
Parachute Play	___	___	___	___	___
Roller Skating	___	___	___	___	___
Exercising	___	___	___	___	___
Bobsledding	___	___	___	___	___
Diving	___	___	___	___	___
Ping Pong	___	___	___	___	___
Weight Lifting	___	___	___	___	___
Instant Lottery	___	___	___	___	___

	I PLAY IT	I WATCH IT	I READ ABOUT IT	I HAVE ATTENDED IT	I WISH I COULD DO IT
Ice Hockey	___	___	___	___	___
Scooters	___	___	___	___	___
Ice Skating	___	___	___	___	___
Body Building	___	___	___	___	___
Motocross	___	___	___	___	___
Trampoline	___	___	___	___	___
Fishing	___	___	___	___	___
College Wrestling	___	___	___	___	___
Dice	___	___	___	___	___
Basketball	___	___	___	___	___
Dragging	___	___	___	___	___
Roller Disco	___	___	___	___	___
Sky Diving	___	___	___	___	___
Water Ballet	___	___	___	___	___
Hunting	___	___	___	___	___
Racquettball	___	___	___	___	___
Pool	___	___	___	___	___
Boxing	___	___	___	___	___
Keep Away	___	___	___	___	___
Camping	___	___	___	___	___
Mountain Climbing	___	___	___	___	___
Badminton	___	___	___	___	___

	I PLAY IT	I WATCH IT	I READ ABOUT IT	I HAVE ATTENDED IT	I WISH I COULD DO IT
Handball	—	—	—	—	—
Roulette	—	—	—	—	—
Track and Field	—	—	—	—	—
Frisbee Play	—	—	—	—	—
Bicycle Motocross	—	—	—	—	—
Water Skiing	—	—	—	—	—
Soccer	—	—	—	—	—
Horseshoe Playing	—	—	—	—	—
Rodeo	—	—	—	—	—
Golf	—	—	—	—	—
Water Polo	—	—	—	—	—
Skate Boarding	—	—	—	—	—
Flying	—	—	—	—	—
Volleyball	—	—	—	—	—
Sailing	—	—	—	—	—
Swimming	—	—	—	—	—
Spenunking	—	—	—	—	—
Walking	—	—	—	—	—

TABLE I

PARTICIPATION IN PHYSICAL ACTIVITY FOR SOCIAL ASPECTS

	$\bar{x}$	
$A_1 B_1 C_1$	19.50	Grand $\bar{x}$ a_1 = 29.00
$A_2 B_1 C_1$	36.00	Grand $\bar{x}$ a_2 = 34.79
$A_3 B_1 C_1$	34.00	Grand $\bar{x}$ a_3 = 36.19
$A_4 B_1 C_1$	38.75	Grand $\bar{x}$ a_4 = 33.35
$A_5 B_1 C_1$	36.00	Grand $\bar{x}$ a_5 = 30.88
$A_1 B_2 C_1$	43.50	
$A_2 B_2 C_1$	39.80	Grand $\bar{x}$ b_1 = 26.92
$A_3 B_2 C_1$	48.67	Grand $\bar{x}$ b_2 = 38.76
$A_4 B_2 C_1$	36.80	
$A_5 B_2 C_1$	40.50	Grand $\bar{x}$ c_1 = 37.35
$A_1 B_1 C_2$	20.67	Grand $\bar{x}$ c_2 = 28.33
$A_2 B_1 C_2$	25.67	
$A_3 B_1 C_2$	20.60	
$A_4 B_1 C_2$	20.50	
$A_5 B_1 C_2$	17.50	
$A_1 B_2 C_2$	32.33	
$A_2 B_2 C_2$	37.67	
$A_3 B_2 C_2$	41.50	
$A_4 B_2 C_2$	37.33	
$A_5 B_2 C_2$	29.50	

A	B	C
1 high	1 male	1 black
2 above average	2 female	2 white
3 average		
4 below average		
5 low		

SOURCE	SUMS OF SQUARES	DF	MEAN SQUARES	F
A (performance)	384.37	4	96.09	.99
B (Sex)	1989.01	1	1989.01	20.41 *
C (Race)	1155.33	1	1155.33	11.86 *
A X B	337.59	4	84.40	.87
A X C	165.62	4	41.40	.42
B X C	114.27	1	114.27	1.17
A X B X C	358.97	4	89.74	.92
S/ABC	5164.05	53	97.43	
TOTAL	N/A	72		

ANOVA Summary Table

TABLE II

PARTICIPATION IN PHYSICAL ACTIVITY FOR TRAINING ASPECTS

	$\bar{x}$	
$A_1 B_1 C_1$	22.00	Grand $\bar{x}$ a_1 = 12.09
$A_2 B_1 C_1$	25.67	Grand $\bar{x}$ a_2 = 19.74
$A_3 B_1 C_1$	22.00	Grand $\bar{x}$ a_3 = 18.81
$A_4 B_1 C_1$	26.25	Grand $\bar{x}$ a_4 = 17.31
$A_5 B_1 C_1$	23.40	Grand $\bar{x}$ a_5 = 18.10
$A_1 B_2 C_1$	9.00	
$A_2 B_2 C_1$	12.60	Grand $\bar{x}$ b_1 = 20.74
$A_3 B_2 C_1$	17.33	Grand $\bar{x}$ b_2 = 13.68
$A_4 B_2 C_1$	13.00	
$A_5 B_2 C_1$	16.00	Grand $\bar{x}$ c_1 = 18.73
$A_1 B_1 C_2$	10.67	Grand $\bar{x}$ c_2 = 15.69
$A_2 B_1 C_2$	21.00	
$A_3 B_1 C_2$	17.40	
$A_4 B_1 C_2$	21.00	
$A_5 B_1 C_2$	18.00	
$A_1 B_2 C_2$	6.67	
$A_2 B_2 C_2$	19.67	
$A_3 B_2 C_2$	18.50	
$A_4 B_2 C_2$	9.00	
$A_5 B_2 C_2$	15.00	

A	B	C
1 high	1 male	1 black
2 above average	2 female	2 white
3 average		
4 below average		
5 low		

SOURCE	SUMS OF SQUARES	DF	MEAN SQUARES	F
A (Performance)	408.59	4	102.15	2.28
B (Sex)	707.34	1	707.34	15.78 *
C (Race)	130.66	1	130.66	2.91
A X B	182.60	4	45.65	1.02
A X C	103.99	4	25.99	.58
B X C	146.61	1	146.61	3.27
A X B X C	46.90	4	11.72	.26
S/ABC	2376.18	53	44.83	
TOTAL	N/A	72		

ANOVA Summary Table

TABLE III

PARTICIPATION IN PHYSICAL ACTIVITY FOR BEAUTY ASPECTS

	$\bar{x}$	
A_1 B_1 C_1	14.50	Grand $\bar{x}$ a_1 = 20.46
A_2 B_1 C_1	19.00	Grand $\bar{x}$ a_2 = 23.37
A_3 B_1 C_1	30.00	Grand $\bar{x}$ a_3 = 27.76
A_4 B_1 C_1	21.25	Grand $\bar{x}$ a_4 = 24.56
A_5 B_1 C_1	25.00	Grand $\bar{x}$ a_5 = 27.79
A_1 B_2 C_1	30.50	
A_2 B_2 C_1	29.00	Grand $\bar{x}$ b_1 = 19.26
A_3 B_2 C_1	30.83	Grand $\bar{x}$ b_2 = 31.08
A_4 B_2 C_1	28.00	
A_5 B_2 C_1	39.67	Grand $\bar{x}$ c_1 = 26.78
A_1 B_1 C_2	13.50	Grand $\bar{x}$ c_2 = 23.57
A_2 B_1 C_2	22.67	
A_3 B_1 C_2	18.20	
A_4 B_1 C_2	14.00	
A_5 B_1 C_2	14.50	
A_1 B_2 C_2	22.83	
A_2 B_2 C_2	31.00	
A_3 B_2 C_2	32.00	
A_4 B_2 C_2	35.00	
A_5 B_2 C_2	32.00	

A	B	C
1 high	1 male	1 black
2 above average	2 female	2 white
3 average		
4 below average		
5 low		

SOURCE	SUMS OF SQUARES	DF	MEAN SQUARES	F
A (Performance)	424.35	4	106.09	1.73
B (Sex)	1982.30	1	1982.30	32.25 *
C (Race)	145.70	1	145.70	2.37
A X B	143.08	4	35.77	.58
A X C	244.64	4	61.16	.99
B X C	66.90	1	66.90	1.09
A X B X C	235.55	4	58.89	.96
S/ABC	3258.22	53	61.48	
TOTAL	N/A	72		

ANOVA Summary Table

TABLE IV

PARTICIPATION IN PHYSICAL ACTIVITY FOR COMPETITION ASPECTS

	$\bar{x}$	
$A_1 B_1 C_1$	45.00	Grand $\bar{x}$ a_1 = 41.79
$A_2 B_1 C_1$	69.00	Grand $\bar{x}$ a_2 = 56.04
$A_3 B_1 C_1$	52.00	Grand $\bar{x}$ a_3 = 52.51
$A_4 B_1 C_1$	56.75	Grand $\bar{x}$ a_4 = 55.11
$A_5 B_1 C_1$	64.80	Grand $\bar{x}$ a_5 = 59.74
$A_1 B_2 C_1$	50.00	
$A_2 B_2 C_1$	32.80	Grand $\bar{x}$ b_1 = 59.11
$A_3 B_2 C_1$	40.83	Grand $\bar{x}$ b_2 = 46.97
$A_4 B_2 C_1$	39.20	
$A_5 B_2 C_1$	50.67	Grand $\bar{x}$ c_1 = 50.11
$A_1 B_1 C_2$	45.67	Grand $\bar{x}$ c_2 = 55.97
$A_2 B_1 C_2$	60.67	
$A_3 B_1 C_2$	57.20	
$A_4 B_1 C_2$	87.50	
$A_5 B_1 C_2$	52.50	
$A_1 B_2 C_2$	26.50	
$A_2 B_2 C_2$	61.67	
$A_3 B_2 C_2$	60.00	
$A_4 B_2 C_2$	37.00	
$A_5 B_2 C_2$	71.00	

A	B	C
1 high	1 male	1 black
2 above average	2 female	2 white
3 average		
4 below average		
5 low		

SOURCE	SUMS OF SQUARES	DF	MEAN SQUARES	F
A (Performance)	2099.01	4	524.75	2.09
B (Sex)	2091.06	1	2091.06	8.32 *
C (Race)	487.92	1	487.92	1.94
A X B	2277.45	4	569.36	2.27
A X C	1225.81	4	306.45	1.22
B X C	100.99	1	100.99	.40
A X B X C	2958.28	4	739.57	2.94
S/ABC	13317.30	53	251.27	
TOTAL	N/A	72		

ANOVA Summary Table

TABLE V

PARTICIPATION IN PHYSICAL ACTIVITY FOR THRILL ASPECTS

	$\bar{x}$	
$A_1 B_1 C_1$	21.00	Grand $\bar{x}$ a_1 = 26.13
$A_2 B_1 C_1$	40.67	Grand $\bar{x}$ a_2 = 35.75
$A_3 B_1 C_1$	26.00	Grand $\bar{x}$ a_3 = 37.64
$A_4 B_1 C_1$	37.00	Grand $\bar{x}$ a_4 = 32.89
$A_5 B_1 C_1$	36.40	Grand $\bar{x}$ a_5 = 38.31
$A_1 B_2 C_1$	33.00	
$A_2 B_2 C_1$	20.00	Grand $\bar{x}$ b_1 = 37.08
$A_3 B_2 C_1$	29.17	Grand $\bar{x}$ b_2 = 31.21
$A_4 B_2 C_1$	19.40	
$A_5 B_2 C_1$	31.83	Grand $\bar{x}$ c_1 = 29.45
$A_1 B_1 C_2$	32.83	Grand $\bar{x}$ c_2 = 38.84
$A_2 B_1 C_2$	38.00	
$A_3 B_1 C_2$	51.40	
$A_4 B_1 C_2$	47.50	
$A_5 B_1 C_2$	40.00	
$A_1 B_2 C_2$	17.67	
$A_2 B_2 C_2$	44.33	
$A_3 B_2 C_2$	44.00	
$A_4 B_2 C_2$	27.67	
$A_5 B_2 C_2$	-45.00	

A	B	C
1 high	1 male	1 black
2 above average	2 female	2 white
3 average		
4 below average		
5 low		

SOURCE	SUMS OF SQUARES	DF	MEAN SQUARES	F
A (Performance)	1112.37	4	278.09	1.72
B (Sex)	489.31	1	489.31	3.03
C (Race)	1251.56	1	1251.56	7.75*
A X B	670.15	4	167.54	1.04
A X C	687.26	4	171.81	1.06
B X C	1.64	1	1.64	1.02
A X B X C	1186.44	4	296.61	1.84
S/ABC	8553.93	53	161.40	
TOTAL	N/A	72		

ANOVA Summary Table

TABLE VI

PARTICIPATION IN PHYSICAL ACTIVITY FOR HEALTH ASPECTS

	$\bar{x}$	
A_1 B_1 C_1	35.00	Grand $\bar{x}$ a_1 = 34.13
A_2 B_1 C_1	38.33	Grand $\bar{x}$ a_2 = 37.02
A_3 B_1 C_1	38.00	Grand $\bar{x}$ a_3 = 41.09
A_4 B_1 C_1	37.00	Grand $\bar{x}$ a_4 = 37.16
A_5 B_1 C_1	40.20	Grand $\bar{x}$ a_5 = 37.55
A_1 B_2 C_1	36.00	
A_2 B_2 C_1	35.40	Grand $\bar{x}$ b_1 = 36.91
A_3 B_2 C_1	39.67	Grand $\bar{x}$ b_2 = 37.87
A_4 B_2 C_1	39.80	
A_5 B_2 C_1	37.00	Grand $\bar{x}$ c_1 = 37.64
A_1 B_1 C_2	39.17	Grand $\bar{x}$ c_2 = 37.14
A_2 B_1 C_2	34.67	
A_3 B_1 C_2	42.20	
A_4 B_1 C_2	35.50	
A_5 B_1 C_2	29.00	
A_1 B_2 C_2	26.33	
A_2 B_2 C_2	39.67	
A_3 B_2 C_2	44.50	
A_4 B_2 C_2	36.33	
A_5 B_2 C_2	44.00	

A	B	C
1 high	1 male	1 black
2 above average	2 female	2 white
3 average		
4 below average		
5 low		

SOURCE	SUMS OF SQUARES	DF	MEAN SQUARES	F
A (Performance)	278.94	4	69.73	.86
B (Sex)	13.16	1	13.16	.16
C (Race)	3.59	1	3.59	.04
A X B	208.45	4	52.11	.64
A X C	105.99	4	26.50	.33
B X C	17.06	1	17.06	.21
A X B X C	401.24	4	100.31	1.24
S/ABC	4282.77	53	80.81	
TOTAL	N/A	72		

ANOVA Summary Table

TABLE VII

PARTICIPATION IN PHYSICAL ACTIVITY FOR FUN ASPECTS

	$\bar{x}$	
$A_1 B_1 C_1$	52.00	Grand $\bar{x}$ a_1 = 47.13
$A_2 B_1 C_1$	51.67	Grand $\bar{x}$ a_2 = 53.23
$A_3 B_1 C_1$	47.00	Grand $\bar{x}$ a_3 = 50.31
$A_4 B_1 C_1$	49.25	Grand $\bar{x}$ a_4 = 50.92
$A_5 B_1 C_1$	51.40	Grand $\bar{x}$ a_5 = 50.93
$A_1 B_2 C_1$	49.50	
$A_2 B_2 C_1$	52.60	Grand $\bar{x}$ b_1 = 49.64
$A_3 B_2 C_1$	53.33	Grand $\bar{x}$ b_2 = 51.37
$A_4 B_2 C_1$	48.60	
$A_5 B_2 C_1$	52.33	Grand $\bar{x}$ c_1 = 50.77
$A_1 B_1 C_2$	44.83	Grand $\bar{x}$ c_2 = 50.24
$A_2 B_1 C_2$	56.33	
$A_3 B_1 C_2$	48.40	
$A_4 B_1 C_2$	52.50	
$A_5 B_1 C_2$	43.00	
$A_1 B_2 C_2$	42.17	
$A_2 B_2 C_2$	52.33	
$A_3 B_2 C_2$	52.50	
$A_4 B_2 C_2$	53.33	
$A_5 B_2 C_2$	57.00	

A	B	C
1 high	1 male	1 black
2 above average	2 female	2 white
3 average		
4 below average		
5 low		

SOURCE	SUMS OF SQUARES	DF	MEAN SQUARES	F
A (Performance)	218.59	4	54.65	.95
B (Sex)	42.53	1	42.53	.74
C (Race)	3.96	1	3.96	.07
A X B	218.45	4	54.61	.95
A X C	214.20	4	53.55	.93
B X C	7.39	1	7.39	.13
A X B X C	136.08	4	34.02	.59
S/ABC	3040.05	53	57.36	
TOTAL	N/A	72		

ANOVA Summary Table

TABLE VIII

PARTICIPATION IN PHYSICAL ACTIVITY FOR RELEASE ASPECTS

	$\bar{x}$	
$A_1 B_1 C_1$	44.50	Grand $\bar{x}$ a_1 = 45.54
$A_2 B_1 C_1$	63.67	Grand $\bar{x}$ a_2 = 58.44
$A_3 B_1 C_1$	59.00	Grand $\bar{x}$ a_3 = 59.67
$A_4 B_1 C_1$	50.50	Grand $\bar{x}$ a_4 = 50.77
$A_5 B_1 C_1$	47.40	Grand $\bar{x}$ a_5 = 51.35
$A_1 B_2 C_1$	49.50	
$A_2 B_2 C_1$	43.40	Grand $\bar{x}$ b_1 = 55.57
$A_3 B_2 C_1$	54.67	Grand $\bar{x}$ b_2 = 50.03
$A_4 B_2 C_1$	42.40	
$A_5 B_2 C_1$	47.50	Grand $\bar{x}$ c_1 = 50.25
$A_1 B_1 C_2$	51.17	Grand $\bar{x}$ c_2 = 55.35
$A_2 B_1 C_2$	56.00	
$A_3 B_1 C_2$	63.00	
$A_4 B_1 C_2$	65.50	
$A_5 B_1 C_2$	55.00	
$A_1 B_2 C_2$	37.00	
$A_2 B_2 C_2$	63.67	
$A_3 B_2 C_2$	62.00	
$A_4 B_2 C_2$	44.67	
$A_5 B_2 C_2$	55.50	

A	B	C
1 high	1 male	1 black
2 above average	2 female	2 white
3 average		
4 below average		
5 low		

SOURCE	SUMS OF SQUARES	DF	MEAN SQUARES	F
A (Performance)	1374.77	4	343.69	2.71
B (Sex)	435.87	1	435.87	3.44
C (Race)	368.45	1	368.45	2.90
A X B	350.47	4	87.62	.69
A X C	243.41	4	60.85	.48
B X C	7.72	1	7.72	.06
A X B X C	936.90	4	234.23	1.85
S/ABC	6724.27	53	126.87	
TOTAL	N/A	72		

ANOVA Summary Table